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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,840	05/17/2002	Aloys Wobben	970054.412USPC	5749

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EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 09/03/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/031,840

Applicant(s)

WOBHEN, ALOYS

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>9</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the phrase "same piston" twice, in line 4 and in line 7, which seems to be for two different pistons. "Same piston" cannot simultaneously introduce concentrated salt water into the discharge chamber and discharge concentrated salt water from the discharge chamber at the same time. Examiner suggests using 'first piston' and 'second piston' for clarity.

Claim Objections

Claims 7,10 and 11 are objected to because of the following informalities: Claims are for "device" but depend from method claim 5. Examiner assumes that this is a typographical error and the instant claims depend from independent, device claim 6. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Childs et al (US 6,017,200).

Claims 6-10: Childs teaches a reverse osmosis device for continuous desalting of water comprising a membrane to separate salt water to desalted water and concentrated water (figures, col 1 lines 5-40), a pressure compensating device (fig 3-8) having several pistons to continuously introduce salt water at increasing pressure to the membrane, and transfer the energy from the discharging water, a feed pump (col 6 lines 65-67), intake chamber in front of piston (fig 3, 7) connected to feed line and the membrane, rear of piston having discharge chamber (fig 3 and 7) connected to concentrate water discharge line, and a pressure chamber in the rear of the piston (see 82, fig 3 and HC's of fig 7) which are hydraulically connected so as to continuously exert pressure on a part of the piston by the concentrated salt water as in claim 6. Controls for the piston devices as in claim 7 (see fig 5,7) so that feed water while being introduced by one piston, concentrate water is discharged from the discharge chamber of the same piston and concentrate water is introduced ion to the discharge chamber of one additional piston (see fig 7). Piston devices having controllable intake and discharge valves as in claim 8 (ex: 103, 107 of fig 3), actively controlled valves in the feed

and discharge lines (see fig 5) as in claim 9, pressure compensating device has three identical piston devices as in claim 10 (see fig 7).

Claims 1-5: Childs teaches a method of desalting water having a reverse osmosis membrane, a pressure compensating device comprising several pistons as described in the rejection of claim 6 above, wherein during operation, the concentrated salt water pressure exerts pressure on the rear sides of the piston through the hydraulic connection between the pressure chambers as in claim 1. Concentrated salt water is introduced in to a discharge chamber of one of the pistons, where simultaneously salt water is conveyed from the intake chamber of the same piston to the membrane, while salt water is introduced in to the intake chamber of a second piston, whereby concentrate water is discharged at a reduced pressure level from the discharge chamber of the second piston as in claim 2 (see col 16 line 57 – col 17 line 48). Piston devices are controlled as in claim 3 (see fig 7 and 8). Pistons are regulated by intake and discharge valves as in claim 4 (see fig 3), and the pressure exerted on a part of the piston is continuous pressure (see fig 8) as in claim 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Childs (200).

Childs teaches all the limitations of claim 6, including the pressure balances on the pistons for the recovery ratio desired (col 12 lines 8-52), but does not specifically teach that $\frac{1}{4}$ of the piston area has pressure from pressure chamber and $\frac{3}{4}$ has from discharge chamber. However, it would be

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obvious to one of ordinary skill in the art at the time of invention that these values could be obtained from the calculations presented by Childs.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Keefer (US 4,434,056 and US Re. 32,144) show reverse osmosis systems with pressure compensation devices as in the present application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon
Patent Examiner


W. L. WALKER
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